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XI. *An Account of a Storm of Thunder and Lightning, near Ludgvan in Cornwall, in a Letter from the Rev. Mr. Wm. Borlase, M. A. F. R. S. to the Rev. Dr. Lyttelton, Dean of Exeter.*

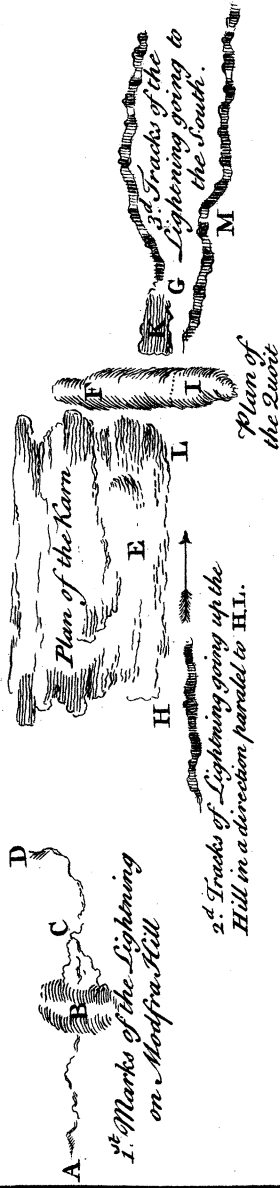
Revd Sir,

Ludgvan, Feb. 1, 1753.

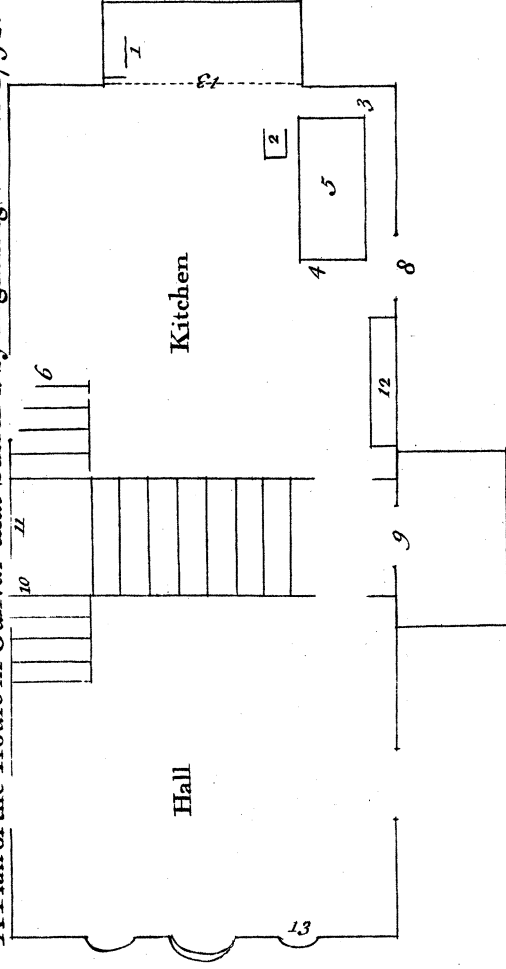
Read Feb. 15,
1753.

SINCE you have received only a short and general account of the lightning in my neighbourhood on the 20 of December last, I fend you the notes, which I took on the spot; in which, you will excuse me, altho' I should be too minutely circumstantial, for fear I should omit any thing, which might contribute ever so little to give you, at this distance, a just idea of what happen'd.

About 8 that morning, I perceived the sky all of a sudden overcast in the east with very dark and red angry clouds; and during the continuance of the clouds, the wind very boisterous. These clouds pass'd away, and at intervals we had clear blue sky, and then large clouds again, attended with cold showers. About a quarter before twelve, there was neither rain nor wind, but sunshine. However, some flying thin clouds were at this time observ'd to join, and form a body in the north-west; and then ensued one of the most shocking peals of thunder I ever heard, attended here at Ludgvan with much lightning, but it did no harm. It was so also, in the high grounds of St. Hillary (next parish to this on the east) where a gentleman travelling found all the downs round him



A Plan of the House in Gullval that Suffer'd by Lightning Dec^r 20 1752.



him on a sudden full of lightning, but was rather frightened than hurt. But this thunder-cloud broke about three miles to the west of this place, in the side of Moelfra hill, in the parish of Maddern, where the marks of it (when I trac'd them) were as in the following sketches.

The first traces were an incision, or scratch, made in the turf, about three inches wide, and two deep, where the lightning coming up from the south-west at *A*, passing through the bank *B*, and issuing out of the bank in three streams, which united again at *C*, turn'd away to the north at *D*. About ten paces to the north of these breaches there are more marks of the same kind, but not in the same direction; for the lightning here came from the north-west, and, passing upwards, I observed the furrow, which it had made, to grow wider, and somewhat deeper, as it gain'd upon the hill, especially where it met with bank or stone; and some banks were five feet wide, which had their tops untouch'd, but were pierced thro' as with a bullet. This second furrow was (as all the rest) not in a strait line, but in a vermicular direction, and with its turnings led us to a Karn, or ledge of flat rocks, *E*. Here the lightning passing parallel to the side of the Karn, *H*, *L*, came in a direction from west by north, and meeting with a flat rock, *F*, *I*, (which in our country we call a quoit) standing on its edge, that southern part of which, *I*, directly opposed its passage, cut off all that end of this quoit at the dotted lines, split the quoit into two thinner ones, took off several splinters, and left large spots of sulphur (whitish like arsenic) on that side, whence the shivers were taken off. On the top of this quoit there is a remarkable
incision,

incision, about three inches long, and as many wide, from which a piece of that quoit, of the same dimensions, was carried off, and in the same manner, as if a musket-ball had been fired at it. The lightning from this rock spread itself to the south, in two branches *G* and *M* breaking and rooting up some stones, and making its way clear under others, and appearing again on the other side. These last-mentioned furrows were ten inches wide, and a foot deep; besides which, we found several places in the hill, which had holes about a foot wide, and 6 or 8 inches deep, and several clods cut thin and clear off from ground: which shews, that as this lightning went like darts through banks and stones, and tore up the ground in many places like a ploughshare, so in other places it spread into an horizontal thin edge, which scooped up and carried off the little unevennesses of the turfy ground. The whole workings of this lightning were in length about a furlong from west to east. There were several people not far from the hill at this time, whose names I will not trouble you with. Two women, one half a mile, the other but a quarter of a mile distant, saw a smoke, at the Karn above-mentioned, as if several muskets had been discharged there. A third woman, not a furlong distant from the Karn, saw the town-place, where her house was, as it were all on fire; and during this dreadful thunder, the sheep on the hill ran to and fro, as if driven by a pack of dogs. This hill of Moelfra is the highest land between north and south sea in this part, about two miles from the former, and four from the latter. The wind was at west, and west-north-west.

This

The first thunder-clap was succeeded, in less than a quarter of an hour, by another, which broke at a village, in the parish of Gullval, called Trythal, about a mile and half to the south-west of Moelfra hill, and was attended with the following melancholy accidents; which, that you may the better apprehend, I have added a plan of the house, shewing the different stations of the persons, who suffered.

Thomas Olivey, a farmer of good substance and repute, was returned from the field, about a quarter before twelve o' clock, and had all his family round him in the kitchen, except his daughter, who was in the hall. There was a pan over the fire in the kitchen-chimney, full of boiling water. The farmer was sitting by the fire (at 1), and his wife on a bench before it (at 2); their only son, 23 years of age, was standing at the window (8), when it lighten'd much, and the first clap of thunder (spoken of before) follow'd. This clap of thunder was so violent here, that nothing was remember'd equal to it; and the back-door of the kitchen (6), which open'd to the north, quiver'd. The farmer called to his son, and desired him not to stand so near the window, lest the lightning should hurt his eyes; upon which the young man removed from the window, backwards, into the corner of the room, and sat down (at 3). For this, the apprentice-boy, laughing at him, was chid by his master, and luckily for him, sent out of the room, to take care of something without-doors. The lightning came from the west north-west, and, falling upon the stack of the kitchen-chimney, which was about four feet square, and as much in height, of hew'd stone, carried it

clear off from the house, and threw it into a pool of water twenty feet distant. In the chamber over the kitchen, directly beneath the top of the chimney, there was a little closet boarded in; all the boards were broken to pieces, the timbers of the roof shatter'd; also the bedstead in that chamber; of the chamber-partition two planks were forced, a large cloaths-press thrown, and the south windows of the chamber-floor (excepting one casement) all broken, and blown out. From the top of the chimney, and chamber-floor, it descended into the kitchen below, where the family was: the farmer saw no lightning, nor heard any thunder, after the first clap before-mention'd; but, as soon as he had given the orders to his apprentice-boy, as before-said, was struck senseless with the first flash, and thrown into the middle of the kitchen, and continued senseless for a quarter of an hour. As soon as he came to himself, he asked, who struck him? but had not the use of his arms; and felt an aching pain, shooting, as he described it, into his bones; and a brand-iron, which hung in the chimney, being thrown down into the pan of water, had dash'd the boiling water upon him to that degree, that his life was in extreme danger for more than a fortnight after.

Mrs. Olivey, sitting at (2), was struck down before the hearth (13). Both her shoes, tho' buckled on as usual, were struck off her feet; but her feet not hurt: and being neither burnt nor senseless, was able to cry out for help, but could not move; for she had no use of her under-limbs for a day and an half.

The

The farmer's brother was at the end of a long table (at 4) in the same room, and was only flung against the wall, about 3 feet distant, not hurt.

Mrs. Olivey's sister was near the back-door (at 6); a plank of this door was started, and beat in: she was struck senseless, and thrown twelve feet off against the fettle (12), which stood against the south wall of the house.

The farmer's son was sitting (at 3); his coat and waistcoats (for he had two on) were torn into shreds, so that I could hardly distinguish where the pieces had formerly join'd; his shirt had a rent two feet long down the back, and was scorch'd; his left shoe torn from his foot; and the little toe of that foot so near cut off, that it hung but by a bit of skin; and he was quite dead. But, tho' reduced to this lamentable condition, as to his exterior, he was not mov'd from his seat, nor his face at all chang'd: his dog was lying at his feet, dead likewise, but never mov'd.

The farmer's daughter receiv'd the shock in the hall (at 7); was struck senseless, but revived soon; felt a trembling all over; her feet tickling, and partly benumb'd, and stiff, as if sleeping; but perceiving in the room a cloud of smoke, and hearing her mother cry, she made haste into the kitchen, which she found full of smoke, stinking like brimstone. The lightning had left a mark quite cross the clavel of the kitchen-chimney, about half an inch wide, in an undulating direction, broke thro' the partitions of the under-floor, thrown down the shelves, carried out all the south windows, forced up the stair-case, blown out the north window (10), miss'd or spar'd a clock, which stood close by the window

(at 11); and being somewhat spent, when it reach'd the hall (7), carried out the windows; moved not some Delft basons, which were in the south window, but forced the door of a beaufet (14), at the end of the hall, an inch and a half inwards; and shook the eastern wall of the house to the very foundation.

I propos'd only to lay before you the matter of fact, in the order of time, place, and degree, as it happen'd; but I cannot help admiring the different motions, shapes, and effects, of this lightning.

The clouds over Moelfra hill, and the village of Trythâl (a space of a mile and a half) were so heavily charg'd with lightning, that here they broke, both the first and the second time, and the thunder-claps were within a few minutes of one another, as being produced but by two portions of one and the same congeries.

The general tendency of this lightning was as the direction of the wind at that time; that is, from the north-west to the east, but where the principal explosions were (as at the hill, and the house) many branches spread off in all directions.

Nor were the shapes, in which it operated, less different than its motions. Sometimes, as it appeared to me at Ludgvan, it was pointed as a dart; in some places edg'd as a scythe, now but one thin sheet or stream, then two or three, and then one again. Now it fell as several separate balls of fire; but upon the house as a large gush, or torrent.

It was all fire, yet of different powers, according to the impregnation of its several portions. Subtil and penetrating as the electrical fire, it affected, shock'd, and permeated, all the human frame. Some
parts

parts of it only scorched wood, but did not melt iron, as with lightning is very common: some tore the leather and cloaths; some cut and wounded, and some killed without wound or rent; and other parts of this lightning again, upon stone, wood, leather, cloaths, and flesh, only rush'd and forc'd with the power of air put into a violent agitation. All this happen'd in this place, and all in an instant: and altho' the cloaths were somewhat findg'd, as well as torn, and the young man's skin round his waist was also scorch'd, yet, from the general effects of this lightning in both places, I conclude, that it was rather swift, and irresistibly piercing, than inflammatory.

The house stands very high, without tree or hill near it. I went thither purposely to examine into the circumstances of this melancholy accident; and, after I had talk'd a little with the farmer and his family, and they had all (for my satisfaction) kindly enter'd into a detail of the particulars, the tears appeared in the eyes of some; others, even then, tho' almost a month after the misfortune, trembled; and all faulter'd in their speech, and could not go on with their story, without frequent pauses. I remain,

S I R,

Ludgvan, Feb. 2,
1753.

Your most obedient servant,

Wm. Borlase.